GANDHISCHOOLOFENGINEERING

BHABANDHA,BERHAMPUR

BRANCH:-ELECTRONICS &TELECOMMUNICATIONENGINEERING

SEMESTER:-4TH

SUBJECT:-MICROPROCESSOR & MICROCONTROLLER

Name of the Faculty- ER. PRANGYA PARAMAITA MAHANTA

	Topic to be taken				Actual topic taken			
Sl. No	**Topic/Module**	**No. of period**	**Details of the topics**	**Date**	**Topic No.**	**Topic Name**	**Date**	**Remarks**
1	Microprocessor (Architecture and Programming-8085-8-bit)	15	1.1 Introduction to Microprocessor and Microcomputer & distinguish between them. 1.2 Concept of Address bus, Data bus, Control bus & System Bus 1.3 General Bus structure Block diagram. 1.4 Basic Architecture of 8085 (8 bit) Microprocessor 1.5 Signal Description (Pin diagram) of 8085 Microprocessor 1.6 Register Organizations, Distinguish between SPR & GPR, Timing & Control Module, 1.7 Stack, Stack pointer &Stack top. 1.8 Interrupts:-8085 Interrupts, Masking of Interrupt(SIM,RIM)	13/02/2023 TO 02/03/2023	1.1 1.2 1.3 1.4 1.5	Introduction to Microprocessor and Microcomputer & distinguish between them. Concept of Address bus, Data bus, Control bus & System Bus General Bus structure Block diagram. Basic Architecture of 8085 (8 bit) Microprocessor Signal Description (Pin diagram) of 8085 Microprocessor	13/02/2023 14/02/2023 15/02/2023 16/02/2023 & 17/02/2023 & 20/02/2023 & 21/02/2023 & 22/02/2023 23/02/2023 & 24/02/2023 &	

					1.6	Register Organizations, Distinguish between SPR & GPR, Timing & Control Module,	25/02/2023 27/02/2023 & 28/02/2023	
					1.7	Stack, Stack pointer &Stack top.	01/03/2023	
					1.8	Interrupts:-8085 Interrupts, Masking of Interrupt(SIM,RIM)	02/03/2023	
2	Instruction Set and Assembly Language Programming	15	2.1 Addressing data & Differentiate between one-byte, two-byte &three-byte instructions with examples. 2.2 Addressing modes in instructions with suitable examples. 2.3 Instruction Set of 8085(Data Transfer, Arithmetic, Logical, Branching, Stack& I/O , Machine Control) 2.4 Simple Assembly Language Programming of 8085 2.4.1 Simple Addition & Subtraction 2.4.2 Logic Operations (AND, OR, Complement 1's & 2's) & Masking of bits 2.4.3 Counters & Time delay (Single Register, Register Pair, More than Two Register) 2.4.4 Looping, Counting & Indexing (Call/JMP etc). 2.4.5 Stack & Subroutine programes. 2.4.6 Code conversion, BCD Arithmetic & 16 Bit data Operation, Block Transfer. 2.4.7 Compare between two numbers 2.4.8 Array Handling (Largest number & smallest number in the array) 2.5 Memory & I/O Addressing,	03/03/2023 TO 22/03/2023	2.1	Addressing data & Differentiate between one-byte, two-byte &three-byte instructions with examples.	03/03/2023	
					2.2	Addressing modes in instructions with suitable examples.	04/03/2023	
					2.3	Instruction Set of 8085(Data Transfer, Arithmetic, Logical, Branching, Stack& I/O , Machine Control)	06/03/2023 & 09/03/2023 & 10/03/2023 & 11/03/2023	
					2.4 2.4.1	Simple Assembly Language Programming of 8085 Simple Addition & Subtraction	13/03/2023 & 14/03/2023	
					2.4.2	Logic Operations (AND, OR, Complement 1's & 2's) & Masking of bits	15/03/2023 & 16/03/2023	
					2.4.3	Counters & Time delay (Single Register, Register Pair, More than Two Register)	17/03/2023 & 18/03/2023	
					2.4.4	Looping, Counting & Indexing (Call/JMP etc).	&	
					2.4.5	Stack & Subroutine programs.	20/03/2023 &	

					2.4.6 2.4.7 2.4.8 2.5	Code conversion, BCD Arithmetic & 16 Bit data Operation, Block Transfer. Compare between two numbers Array Handling (Largest number & smallest number in the array) Memory & I/O Addressing,	21/03/2023 22/03/2023	
3	TIMING DIAGRAMS.	08	3.1 Define opcode, operand, T-State, Fetch cycle, Machine Cycle, Instruction cycle & discuss the concept of timing diagram. 3.2 Draw timing diagram for memory read, memory write, I/O read, I/O write machine cycle. 3.3 Draw a neat sketch for the timing diagram for 8085 instruction (MOV, MVI, LDA instruction).	23/03/2023 TO 03/04/2023	3.1 3.2 3.3	Define opcode, operand, T-State, Fetch cycle, Machine Cycle, Instruction cycle & discuss the concept of timing diagram. Draw timing diagram for memory read, memory write, I/O read, I/O write machine cycle. Draw a neat sketch for the timing diagram for 8085 instruction (MOV, MVI, LDA instruction).	23/03/2023 & 24/03/2023 25/03/2023 & 27/03/2023 & 28/03/2023 29/03/2023 & 31/03/2023 & 03/04/2023	
4	Microprocessor Based System Development Aids	10	4.1 Concept of interfacing 4.2 Define Mapping &Data transfer mechanisms - Memory mapping & I/O Mapping 4.3 Concept of Memory Interfacing:- Interfacing EPROM & RAM Memories 4.4 Concept of Address decoding for I/O devices 4.5 Programmable Peripheral Interface: 8255 4.6 ADC & DAC with Interfacing. 4.7 Interfacing Seven Segment Displays 4.8 Generate square waves on all lines of 8255 4.9 Design Interface a traffic light control system using 8255. 4.10 Design interface for stepper motor control using 8255. 4.11 Basic concept of other Interfacing DMA controller,USART	04/04/2023 TO 17/04/2023	4.1 4.2 4.3 4.4 4.5	Concept of interfacing Define Mapping &Data transfer mechanisms - Memory mapping & I/O Mapping Concept of Memory Interfacing:- Interfacing EPROM & RAM Memories Concept of Address decoding for I/O devices Programmable Peripheral Interface: 8255	04/04/2023 04/04/2023 05/04/2023 05/04/2023 06/04/2023 & 08/04/2023	

					4.6	ADC & DAC with Interfacing.	10/04/2023	
					4.7	Interfacing Seven Segment Displays	11/04/2023	
					4.8	Generate square waves on all lines of 8255	12/04/2023	
					4.9	Design Interface a traffic light control system using 8255.	13/04/2023	
					4.10	Design interface for stepper motor control using 8255.	15/04/2023	
					4.11	Basic concept of other Interfacing DMA controller,USART	17/04/2023	
5	Microprocessor (Architecture and Programming-8086-16 bit)	12	5.1 Register Organisation of 8086 5.2 Internal architecture of 8086 5.3 Signal Descriptionof 8086 5.4 General Bus Operation& Physical Memory Organisation 5.5 Minimum Mode & Timings, 5.6 Maximum Mode & Timings, 5.7 Interrupts and Interrupt Service Routines, Interrupt Cycle, Non-Maskable Interrupt, Maskable Interrupt 5.8 8086 Instruction Set & Programming: Addressing Modes, Instruction Set, Assembler Directives and Operators, 5.9 Simple Assembly language programmingusing 8086 instructions.	18/04/2023 TO 02/05/2023	5.1	Register Organization of 8086	18/04/2023	
					5.2	Internal architecture of 8086	19/04/2023	
					5.3	Signal Description of 8086	20/04/2023 & 21/04/2023	
					5.4	General Bus Operation& Physical Memory Organization	24/04/2023	
					5.5	Minimum Mode & Timings	25/04/2023	
					5.6	Maximum Mode & Timings	25/04/2023	
					5.7	Interrupts and Interrupt Service Routines, Interrupt Cycle, Non-Maskable Interrupt, Maskable Interrupt	26/04/2023	
					5.8	8086 Instruction Set & Programming: Addressing Modes, Instruction Set, Assembler Directives and Operators	27/04/2023 & 28/04/2023	

					5.9	Simple Assembly language programming using 8086 instructions.	29/04/2023 & 01/05/2023 & 02/05/2023	
6	Microcontroller (Architecture and Programming-8 bit):-	15	6.1 Distinguish between Microprocessor & Microcontroller 6.2 8 bit & 16 bit microcontroller 6.3 CISC & RISC processor 6.4 Architectureof8051Microcontroller 6.5 Signal Descriptionof8051Microcontrollers 6.6 Memory Organisation-RAM structure, SFR 6.7Registers,timers,interruptsof8051Microcontrollers 6.8 Addressing Modes of 8051 6.9 Simple 8051 Assembly Language ProgrammingArithmetic & Logic Instructions , JUMP, LOOP, CALL Instructions, I/O Port Programming 6.10 Interrupts, Timer & Counters 6.11 Serial Communication 6.12 Microcontroller Interrupts and Interfacing to 8255	03/05/2023 TO 22/05/2023	6.1	Distinguish between Microprocessor & Microcontroller	03/05/2023	
					6.2	8 bit & 16 bit microcontroller	03/05/2023	
					6.3	CISC & RISC processor	03/05/2023	
					6.4	Architecture of 8051 Microcontroller	04/05/2023 & 06/05/2023	
					6.5	Signal Description of 8051 Microcontrollers	08/05/2023 & 09/05/2023	
					6.6	Memory Organisation-RAM structure, SFR	10/05/2023	
					6.7	Registers,timers,interruptsof8051 Microcontrollers	11/05/2023	
					6.8	Addressing Modes of 8051	12/05/2023	
					6.9	Simple 8051 Assembly Language ProgrammingArithmetic & Logic Instructions , JUMP, LOOP, CALL Instructions, I/O Port Programming	13/05/2023 & 15/05/2023 & 16/05/2023 & 17/05/2023	
					6.10	Interrupts, Timer & Counters	18/05/2023	
					6.11	Serial Communication	20/05/2023	
					6.12	Microcontroller Interrupts and	22/05/2023	

						Interfacing to 8255		

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